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AN ANALYSIS OF TRADING STRATEGIES OF EQUITY DERIVATIVE TRADERS IN KERALA

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ABSTRACT

The derivatives market received a great deal of attraction nowadays and a lot of people are attracted to derivative trading. The use of different trading techniques and strategies by equity derivative traders was examined in this study using eleven statements relating to trading techniques and strategies. The findings indicate that most traders often utilise stop-loss methods and take international stock index fluctuations into account when creating trading plans. It is also found that the majority of the traders prefer option writing rather than options buying. Comparison of trading strategies of different demographic groups was also made and it is found that age, education, occupation, and trading capital significantly influence the use of trading strategies of equity derivative traders.

KEYWORDS: Equity Derivatives, Trading Strategies, Derivatives Market, Futures and Options

1. INTRODUCTION

Derivatives have become increasingly important in finance. Derivative traders have certain preferences and strategies of trading in the derivative market. Derivative traders generally adopt certain techniques and strategies while trading in the derivative market (Reddy & Sreeram, 2021). These techniques include deciding stop-loss position, using option strategy builder software, using Algorithmic trading, etc. the habits of using these techniques have been analyzed and presented in this study. Traders may adopt various trading strategies for trading successfully in the derivatives market. This study examines the trading strategies of equity derivative traders in Kerala.

2. LITERATURE REVIEW

In the last 40 years, derivatives have become increasingly important in finance. Futures and options are actively traded on many exchanges throughout the world. The goal of this section is to identify and synthesize relevant literature in the area of derivative markets particularly the trading strategies of derivative traders. Nuruzzaman, (2011) found that behavioural biases are observed in the investor's trading preferences and behaviour. Raghavendra, (2013) examined the amount of awareness of retail investors regarding financial derivatives, as well as their impression of derivatives as an investment opportunity. Thesurvey results, the majority of respondents believe that trading in derivatives is riskier than trading in the equities market.Aravind, (2013) discovered that the majority of investors learned about derivatives through broking businesses, indicating that broking firms in south Kerala are taking an active interest and making efforts to promote financial derivatives. Thamotharan & Prabakaran, (2013) suggests that appropriate governmental actions will assist investors in perceiving derivative investments and making sound decisions. Santhini, (2013) found that the majority of capital market investors invest more than half of their overall investment in the derivative market. Tripathi, (2014) discovered that education, profession, and gender have little effect on derivative trading behaviour, but income has a considerable effect on derivative investing. According to Manrai, (2015) there has been an increase in trading knowledge of derivatives trading among ordinary investors in India. This was owing to an increase in the number of trading agents or organizations in the market that allow regular investors to trade derivatives on exchanges such as MCX and NCDEX. Ansari et al., (2015) founds that gender, age, income and education do not have a significant effect on the perception of derivatives products. Jacob,(2016) assessed stock market investors' perceptions and experiences with derivatives. According to the study's findings, small investors do not view derivatives as a risk-hedging instrument. Vattoli, (2018) pointed out individual investors' illogical trading preferences and practices, which resulted in large losses. Anu, (2018) discovered that the introduction of stock futures and options has a considerable impact on stock market volatility.

After reviewing the literature, it is discovered that there is room for more research because studies on the trading of stock derivative traders are quite uncommon. In order to better understand the trading tactics used by equity derivative traders in Kerala, this research is being conducted.

3. METHODOLOGY

Primary data were collected using self-completion questionnaires emailed via Google forms from a sample of 300 equities derivative dealers in Kerala. The purpose of the questionnaire is to pick an adequate and trustworthy sample size in order to obtain meaningful results. The replies were automatically saved in Google Forms as an Excel (CSV) file, which could then be exported to SPSS Version 22 for additional coding. In addition to the basic respondent profile, descriptive statistics such as frequencies, means, and standard deviation

are utilized to discover response patterns. ANOVA, t-test, and other parametric tests were utilized for data analysis because the distributions were found to be normal.

4. RESULTS AND DISCUSSIONS

Derivative traders generally adopt certain techniques and strategies while trading in the derivative market (Reddy & Sreeram, 2021). These techniques include deciding stop-loss position, using option strategy builder software, using Algorithmic trading, etc. the habits of using these techniques have been analyzed and presented in this study. The trading strategies and techniques are examined on a five-point scale using ten variables. The data were analyzed using one-sample t-test with a test value of 3, which is the mean of the response scale and the results are summarized in Table 1

(n=300)

Statements	Response	Frequency	Per cent	Mean	SD	t*	p-value
I always decide stop-loss for all trading position	SD	35	11.7	3.70	1.39	8.743	<.01***
	D	23	7.7				
	N	67	22.3				
	A	47	15.7				
	SA	128	42.7				
I always trade with the help of option strategy builder	SD	103	34.3	2.77	1.57	-2.566	.011**
	D	36	12.0				
	N	58	19.3				
	A	34	11.3				
	SA	69	23.0				
I always use Algo-trading system	SD	221	73.7	1.54	1.06	-23.908	<.01***
	D	30	10.0				
	N	28	9.3				
	A	8	2.7				
	SA	13	4.3				
I always trade based on the movement of foreign stock indices	SD	55	18.3	3.27	1.44	3.234	<.01***
	D	29	9.7				
	N	85	28.3				
	A	42	14.0				
	SA	89	29.7				
I always prefer index derivatives for trading than stock derivatives	SD	17	5.7	3.98	1.16	14.61	<.01***
	D	16	5.3				
	N	54	18.0				
	A	83	27.7				
	SA	130	43.3				
I always decide risk-reward ratio for all my trade	SD	18	6.0	3.78	1.18	11.46	<.01***
	D	26	8.7				
	N	63	21.0				
	A	89	29.7				
	SA	104	34.7				
I always prefer to sell options than buy options	SD	50	16.7	3.22	1.45	2.67	<.01***
	D	51	17.0				
	N	69	23.0				
	A	42	14.0				
	SA	88	29.3				
I always consider option Greeks while trading	SD	73	24.3	2.86	1.38	-1.71	.088
	D	44	14.7				
	N	80	26.7				
	A	57	19.0				
	SA	46	15.3				
I always consider Put Call Ratio (PCR) while trading	SD	62	20.7	2.89	1.28	-1.45	.149
	D	41	13.7				
	N	98	32.7				
	A	65	21.7				
	SA	34	11.3				
I always consider Implied Volatility and movements of India VIX while trading	SD	40	13.3	3.50	1.36	6.30	<.01***
	D	29	9.7				
	N	65	21.7				
	A	74	24.7				
	SA	92	30.7				
I always consider cost of each strategy while trading	SD	35	11.7	3.47	1.32	6.11	<.01***
	D	35	11.7				
	N	69	23.0				
	A	77	25.7				
		84	28.0				

Source: Primary data ****,**Difference is significant a 1% & 5% level respectively*

**One sample t-test, Average=3*

Table 1: Trading Techniques and Strategies of equity derivative traders

Table 1 presents the trading techniques and strategies of equity derivative traders in Kerala. With respect to the use of Stop-loss it is found that the mean score obtained for measuring the use of stop-loss is 3.7, which is significantly above the mean score of the response scale i.e. 3, and the one-sample t-test shows that the mean score is statistically significantly higher than the population average score, t(299) = 8.743, p = <.01, Hence, it can be concluded that most of the traders are highly using stop-loss for all their trade. The mean score obtained for measuring the use of option strategy builder is 2.77, which is significantly below the mean score of the response scale, and the one-sample t-test shows that the mean score is statistically significantly lower than the population average score,t(299) = -2.566, p = .011. Hence, it can be concluded that majority of the traders are not using option strategy builder software for their trade. The mean value of algo trading is 1.54, which is below the mean score of response scale, and the one-sample t-test shows that the mean score is statistically significantly lower than the population average score, t(299) = -23.908, p = <.01, Hence, it can be concluded that majority of the traders do not use Algorithmic trading technique. In case of the use of Foreign Stock Market Indices the mean is 3.27, which is above the mean

of response scale, and the one sample t-test shows that mean is statistically higher than the population average score, t(299) = 3.234, p = .001. Hence, it can be concluded that majority of the traders are frequently using the movement of foreign stock market indices for designing their trading strategies.

The study indicates that the mean value obtained for use of index derivatives is 3.98, which is above the mean of response scale, and the one sample t-test shows that mean score is statistically significantly higher than the population average score, t(299) = 14.61, p = <.01, Hence, it can be interpreted that majority of the traders are highly using index options and futures for trade than stock options and futures. The mean score of use of risk-reward ratio is above the mean score of the response scale, and the one-sample t-test shows that the mean score is significantly higher than the population average score, t(299) = 11.46, p = <.01 Hence, it can be found that majority of the traders are highly using risk-reward ratio while designing their trading strategies in the derivative market.

The scores obtained for measuring the preference of option writing is 3.22, which is significantly above the mean score of response scale, and the test shows that the mean score is statistically higher than the population average score and therefore majority of the traders are highly preferring option selling rather than buying options. With regard to the use of option Greeks the mean score is 2.86, which is almost equal to the mean score of the response scale, and the one-sample t-test shows that majority of traders are moderately using option Greeks for designing their trading strategies. The mean value of use of PCR is almost equal to the mean score of the response scale, and it can be concluded that majority of the traders are moderately using the put-call ratio for designing their trading strategies. With regard to the use of implied volatility and India VIX the t-test shows that mean score is statistically significantly higher than the population average score. Hence, it is found that majority of the traders are highly using IV and VIX for designing their trading strategies. Finally the mean value of the influence of the Cost of Strategy is significantly above the mean score of the response scale, and the one-sample t-test shows that majority of the traders are highly considering the cost of strategy while designing their trading strategies.

The equity derivative traders are classified in to three groups based on the score of trading techniques and strategies and is done by combing all the eleven variables used for examining the trading techniques and strategies. The data is then analyzed using one-sample t-test with a test value of '2'. The results were presented in the Table 2.

Use of trading techniques	Category	Frequency	Percent	Mean	Std. Dev.	t	p-value
Low	1	62	20.67	2.17	0.749	4.09	<.01***
Medium	2	123	41.00				
High	3	115	38.33				
Total		300	100.0				

Source: Primary data ****Difference is significant a 1% level respectively*

Table 2: Classification of traders based on trading strategies

Table 2 shows that out of 300 sample derivative traders 20.67% have low use oftrading techniques, 41% traders have medium use of trading techniques and 38.3% have high use of trading techniques and strategies specified in this study. The mean score obtained for measuring the category of trading techniques and strategies is 2.17, the result of one-sample t-test shows that the mean score is different from the population average score, so it can be concluded that the use of trading techniques and strategies is moderately high among equity derivative traders in Kerala.

The trading techniques and strategies used by equity derivative traders are compared with respect to eight variables such as: area, gender, age, education, occupation, income, trading experience, trading capital and knowledge level..In the case of area and gender-wise comparison independent sample t-test is used in all other cases; ANOVA is applied to check the difference in trading strategies between different groups. The analysis and results shows that there is no significant difference in trading strategies of urban and rural equity derivative traders, male and female traders. The test results of ANOVA are presented in Table 3.

Grouping Variable		**Sum of Squares**	**df**	**Mean Square**	**F**	**p-value**
Age	Between Groups	1261.34	3	420.45	7.19	<.01***
	Within Groups	17296.53	296	58.43		
	Total	18557.88	299			
Education	Between Groups	1009.76	4	252.44	4.18	.003***
	Within Groups	17797.08	295	60.33		
	Total	18806.84	299			
Occupation	Between Groups	1176.04	5	235.21	3.92	.002***
	Within Groups	17643.68	294	60.01		
	Total	18819.72	299			

Trading Experience	Between Groups	324.22	3	108.07	1.73	.161
	Within Groups	18495.50	296	62.49		
	Total	18819.72	299			
Trading Capital	Between Groups	1770.243	4	442.561	7.77	<.01***
	Within Groups	16793.744	295	56.928		
	Total	18563.987	299			

Source: Primary data ****The mean difference is significant at the 1% level*

Table 3: Result of One-way ANOVA: Occupation-wise analysis of the use of trading strategies

Table 3 shows that there is statistically significant difference in the trading techniques and practices among traders of different age groups, different educational qualifications and different occupations. But in case of Trading experience this study reveals that there is statistically no significant difference in trading techniques and strategies among traders with different years of trading experience. Trading capital wise analysis of trading techniques reveals that there is a statistically significant difference in the mean value of trading techniques and strategies among traders with different trading capital

4.1 Comparison of Knowledge Level and Use of Trading Strategies

The level of knowledge about the derivative market is an important factor in determining the use of trading techniques and strategies of a derivative trader. The knowledge level of derivative traders is measured using fifteen variables and traders are classified into three categories based on their level of knowledge about the derivative market. The category 1 represents traders with a low level of knowledge about derivative market. The category 2 represents traders with a moderate level of knowledge about derivative market, and the category 3 represents traders with a high level of knowledge about derivative market.

To examine the relationship between the level of knowledge and use of trading techniques and strategies, descriptive analysis has been done which shows the mean score of trading strategies with different levels of knowledge about derivative market. To find out the statistical significance of the difference in mean score One-way Analysis of Variance (ANOVA) is performed. The test result is summarized in Table 4.

	Sum of Squares	**df**	**Mean Square**	**F**	**p-value**
Between Groups	3837.59	2	1918.79	38.69	<.01***
Within Groups	14726.39	297	49.58		
Total	18563.99	299			

Source: Primary data ****The difference is significant at the 1% level.*

Table 4: Result of One-way ANOVA: Level of Knowledge-wise analysis of Trading Strategies

The one-way ANOVA reveals that there is statistically significant difference in mean score of trading techniques and strategies among traders with different level of knowledge about derivative market (F (2, 297) = [38.69], p = .000). To find out the exact significant difference in use of trading techniques and strategies between different category of traders with regard to knowledge level Tukey's HSD test has been applied and the result is shown in Table 5.

Knowledge Level (I)	**Knowledge Level (J)**	**Mean Difference (I-J)**	**Std. Error**	**p-value**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Low (Category1)	Medium	-4.43222*	1.20186	.001	-7.2632	-1.6012
	High	-9.42151*	1.13615	.000	-12.0977	-6.7453
Medium (Category 2)	Low	4.43222*	1.20186	.001	1.6012	7.2632
	High	-4.98929*	.91007	.000	-7.1330	-2.8456
High (Category 3)	Low	9.42151*	1.13615	.000	6.7453	12.0977
	Medium	4.98929*	.91007	.000	2.8456	7.1330

Source: Primary data * *The difference is significant at the 5% level*

Table 5: Level of knowledge-wise Post Hoc (HSD) analysis for multiple comparisons of trading strategies

Table 5 shows the result of HSD test for multiple comparisons and it is found that the mean value of trading techniques and strategies is significantly different between all three groups of traders, i.e. between traders with low knowledge and medium knowledge (*Category 1 and Category 2*) (p = 0.001, 95% C.I. = [-7.2632, -1.6012]), between traders with low knowledge and high knowledge (*Category1 and Category 3*) (p =.000, 95% C.I. = [-12.0977, -6.7453]), and between traders with medium level of knowledge and high level of knowledge (*Category 2 and Category 3*) (p = .000, 95% C.I. = [-7.1330, -2.8456]). From the above results it is evident that traders with higher level of knowledge about derivative market are highly using trading techniques and strategies.

5. CONCLUSION

This study examined the trading strategies of equity derivative traders in Kerala. The distribution of data relating to strategies was found to be normal and therefore parametric tests were applied to examine the relationship between variables. The use of different trading techniques and strategies by equity derivative traders was examined in this study using eleven statements relating to trading techniques and strategies. The result shows that the majority of the traders are frequently use stop-loss trading strategies and considering the movements of foreign stock indices while designing trading strategies. It is also found that the majority of the traders are preferring option writing to options buying, this may connect to the findings that most of the traders are considering the risk-reward ratio and cost of the strategy of their trade, which may indicate that options writing gives better risk-reward than options buying. A comparison of trading strategies of different demographic groups was also made and it is found that age, education, occupation, and trading capital significantly influence the use

of trading strategies of equity derivative traders.

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